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Atty Dkt. No.: 10010010-1
USSN: 10/066,516

AMENDMENT

Please incorporate the following amendments into the subject application.

In the Claims:

1. (Currently Amended) A method comprising:

- a) reading a first chemical array having a plurality of features at an array reading station, to obtain array signal data;
- b) saving the array signal data in a memory to produce saved signal data;
- and
- c) automatically retrieving the saved signal data from the memory and extracting feature characteristics therefrom,

wherein ~~the saved signal data is~~ said feature characteristics are extracted from said saved signal data while a second chemical array is being read at said array reading station.

2. (Original) A method according to claim 1 wherein the arrays are polynucleotide or peptide arrays.

3. (Original) A method according to claim 1 wherein the chemical array saved signal data is automatically retrieved from the memory at each of one or more processors as the processor becomes available to perform feature characteristic extraction on the retrieved signal data for the chemical array, and extracts feature characteristics from the retrieved signal data.

4. (Previously presented) A method according to claim 3 wherein multiple arrays are read in step a) and wherein step c) is automatically repeated by each of the one or more processors until all saved signal data for the multiple chemical arrays has had feature characteristics extracted therefrom.

5. (Previously presented) A method according to claim 1 wherein the first array is associated with a corresponding identifier, the method additionally comprising

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reading the array identifier and saving the identifier in the memory in association with the saved array signal data for the corresponding array.

6. (Previously presented) A method according to claim 5 additionally comprising: retrieving the identifier from the memory in association with the retrieved array signal data, and saving extracted feature characteristics for the first array in a memory in association with the retrieved identifier.

7. (Previously presented) A method according to claim 6 additionally comprising retrieving extracted feature characteristics of said first array based on the corresponding identifier for that array.

8. (Previously presented) A method according to claim 5 wherein the associated array identifier is on the array substrate, a housing carrying the array, or in a same package carrying the array.

9. (Previously presented) A method according to claim 7 additionally comprising at a sample processing station, exposing said first array to a sample and reading the associated array identifier; wherein the array reading is performed at an array reading station and extracted feature characteristics for the array are retrieved based on the associated array identifier as read at the sample processing station.

10. (Previously presented) A method according to claim 1 wherein multiple arrays are read in step a) at multiple reading stations, the method additionally comprising for each of multiple arrays, saving a reading station identification or characteristic in the memory in association with the saved signal data for that array.

11. (Previously presented) A method according to claim 1 additionally comprising saving a processor identification or feature extraction characteristic in a memory in association with the extracted feature characteristics for said chemical array.

12. (Cancelled).

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13. (Previously presented) A method comprising:

- a) reading at each of multiple reading stations, multiple chemical arrays each having a plurality of features, to obtain array signal data;
- b) saving the array signal data from the multiple reading stations in a common memory;
- c) automatically retrieving saved signal data for chemical arrays from the common memory at each of one or more processors communicating with the common memory, as each processor becomes available to perform feature characteristic extraction on the retrieved signal data for the chemical array, and extracting feature characteristics from the retrieved chemical array signal data at each of the processors, wherein there are multiple processing stations communicating with the common memory, each of which retrieves chemical array saved signal data from the common memory.

14. (Previously presented) A method according to claim 13 wherein each of the read arrays is associated with a corresponding identifier, the method additionally comprising reading the array identifiers at each of the multiple reading stations and saving each read array identifier in the common memory in association with the saved array signal data for the corresponding array.

15. (Original) A method according to claim 14 additionally comprising for each of multiple arrays: retrieving the identifier from the common memory in association with the retrieved array signal data, and saving extracted feature characteristics for the array in a memory in association with the retrieved identifier.

16. (Previously presented) A method comprising:

- a) reading at each of one or more reading stations, multiple chemical arrays each having a plurality of features, to obtain array signal data;
- b) saving the array signal data from the one or more reading stations in a common memory;
- c) automatically retrieving saved signal data for chemical arrays from the common memory at each of multiple processing stations communicating with the

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common memory, and extracting feature characteristics from the retrieved chemical array signal data at each of the processing stations.

17. (Original) A method according to claim 14 wherein the associated array identifiers are on the array substrate, a housing carrying the array, or in a same package carrying the array.

18. (Previously presented) A method comprising:

- a) receiving at a hub station from multiple reading stations, array signal data from the reading of multiple chemical arrays each having a plurality of features;
- b) saving the received array signal data from the multiple reading stations in a memory;
- c) automatically retrieving saved array signal data for arrays from the memory and communicating the retrieved array signal data to multiple processing stations.

19. (Original) A method according to claim 18 additionally comprising receiving an array identifier with the array signal data for each corresponding array and saving both in association with one another.

20. (Original) A method according to claim 19 wherein the array signal data for each array is retrieved based on a received communication of the identifier for the corresponding array.

21. (Original) A method according to claim 18 additionally comprising, for each of multiple reading stations, receiving a reading station identification or characteristic at the hub station in association with an array signal data, and saving the received reading station identification or characteristic in a memory in association with the saved signal data for that array.

22. (Currently Amended) An apparatus comprising:

- a) a memory;
- b) an array reader having a first processor which communicates with the memory, wherein the first processor causes the reader to read a first chemical array

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having a plurality of features, to obtain array signal data, and saves the read array signal data in the memory to produce saved signal data; and

c) a second processor communicating with the memory and which automatically retrieves the saved signal data from the memory and extracts feature characteristics therefrom, wherein ~~the saved signal data is~~ said feature characteristics are automatically extracted from said saved signal data while a second array is being read by the array reader.

23. (Previously presented) An apparatus according to claim 22 wherein the second processor automatically retrieves saved signal data for said first chemical array from the memory as the processor becomes available to perform feature characteristic extraction on the retrieved signal data for the chemical array, and extracts feature characteristics from the retrieved signal data.

24. (Previously presented) An apparatus according to claim 22 wherein: the array reader includes an identifier reader which reads a corresponding array identifier associated with the first array; and the first processor saves each read array identifier in the memory in association with the saved array signal data for the corresponding array.

25. (Previously presented) An apparatus according to claim 24 wherein second processor retrieves the identifier from the memory in association with the retrieved array signal data, and saves extracted feature characteristics for the array in a memory in association with the retrieved identifier.

26. (Original) An apparatus according to claim 25 additionally comprising a user station including a third processor which communicates with the memory in which extracted feature characteristics and associated identifiers are saved and retrieves therefrom extracted feature characteristics for each of multiple arrays based on the corresponding identifier for that array.

27. (Original) An apparatus according to claim 24 wherein the identifier reader reads associated array identifiers from an array substrate or a housing carrying the array.

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28. (Original) An apparatus according to claim 22 wherein: the apparatus has multiple array readers each having a corresponding first processor which communicates with the same common memory, wherein each first processor causes the corresponding reader to read multiple chemical arrays each having a plurality of features, to obtain array signal data, and saves the read array signal data in the common memory; and each first processor of each array reader saves a reading station identification or characteristic in the common memory in association with the saved signal data for each array read at corresponding array reader.

29-35. (Cancelled)

36. (Currently Amended) ~~A method comprising forwarding data representing a result of a reading and extracting obtained by the method of claim 1.~~ The method according to Claim 1 further comprising forwarding data representing a result of said reading and extracting.

37. (Original) A method according to claim 36 wherein the data is communicated to a remote location.

38. (Original) A method comprising receiving data representing a result of a reading and extracting obtained by the method of claim 1.